

Acid-Base Stoichiometry Titrations Involving Endpoints

Steps:

1. Write the non-ionic equation, after carefully considering the number of endpoints, with all information beneath the equation
2. Find the moles of given using $C = \frac{n}{V}$
3. Find the moles of unknown by multiplying by the ratio of $\frac{\text{Unknown coefficient}}{\text{Given coefficient}}$
4. Find the concentration of the unknown using $C = \frac{n}{V}$

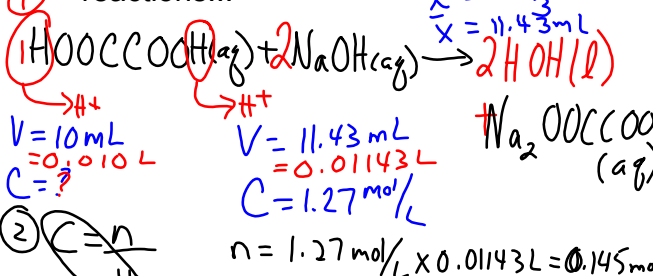
Example: Find the concentration of oxalic acid in rust remover.
The oxalic acid is titrated with 1.27 mol/L sodium hydroxide.
The rest of the data is in the table below.

Titration of 10.0 mL of oxalic acid with sodium hydroxide

Trial	1	2	3	4
Final Vol.	12.1	23.5	34.9	46.4
Initial Vol.	0.3	12.1	23.5	34.9

Ex1: Suppose there are 2 quantitative

reactions...

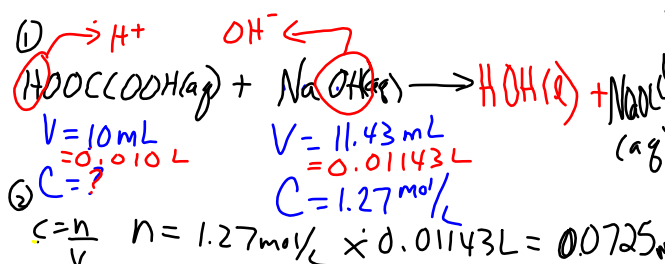


② $C = \frac{n}{V}$

③ $0.0145 \text{ mol} \times \frac{1 \text{ mol?}}{2 \text{ mol given}} = 0.00725 \text{ mol}$

④ $C = \frac{0.00725 \text{ mol}}{0.010 \text{ L}} = 0.725 \text{ mol/L} \text{ OR } 7.25 \times 10^{-1} \text{ mol/L}$

Ex 2: Suppose there is only 1 quantitative reaction....



③ $0.0145 \text{ mol} \times \frac{1 \text{ mol?}}{1 \text{ mol given}} = 0.0145 \text{ mol}$

④ $C = \frac{n}{V} = \frac{0.0145 \text{ mol}}{0.010 \text{ L}} = 1.45 \text{ mol/L}$